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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,662	07/05/2001	Paul Giotta	FRR-12587	2660

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EXAMINER	
BONZO, BRYCE P	

ART UNIT	PAPER NUMBER
2114	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/899,662	GIOTTA ET AL.	
	Examiner	Art Unit	
	Bryce P Bonzo	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2001*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-7 and 11-14* is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *8-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

REASONS FOR ALLOWANCE

Claims 1-7 and 11-14 are allowed.

Claims 8-10 contain a significant typographical error requiring Applicant's explicit correction prior to allowance. These claim contain allowable matter.

Applicant is strongly advised to contact the Examiner at the p[hone number below to authorize an Examiner's Amendment to correct this error and expedite a Notice of Allowability.

Claims 8-10 contain two periods. Each contain a period in the body appearing between limitations, and conclude with a period. Applicant is required to modify the first period to a comma in both instances prior to receiving a Notice of Allowance.

The following is an examiner's statement of reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

As per claims 1-6:

For a message system for delivering data in the form of messages between message clients, the message system comprising a server cluster containing a group of message manager nodes with means for storing and distributing messages a method for ensuring operation during node failures and network partitioning, the method comprising:

Maintaining, in each running message manager node, a cluster state data set comprising information about the nodes present in the cluster

Repeatedly evaluating, in each running one of said message manager nodes, a view state data set comprising information about the server nodes able to communicate with said message manager node,

Comparing said cluster state data set with said view state data set and evaluating if all message managers are able to communicate with said message manager node,

If not all message managers are able to communicate with said message manager node, determining an operational state for point-to-point style messaging out of at least two different states, where

a first one of said at least two different states is an unrestricted state for normal operation, the message managers being in said unrestricted state being allowed to dispatch point-to-point messages sent both prior to and since the last change of the view state of the current network, and

a second one of said two different states is a restricted state, the message managers being in said restricted state not being allowed to dispatch point-to-

point messages sent prior to the last change of the view state of the current network,

and where the operational state is determined in a manner that of any two message manager nodes that are responsible for dispatching the same point-to-point messages not being able to communicate with each other, at most one can be in an unrestricted operational state.

As per claim 7,

For a message system for delivering data in the form of messages between message clients, the message system comprising a server cluster containing a group of message manager nodes with means for storing and distributing messages a method for ensuring operation during node failures and network partitioning, the method comprising:

Maintaining, in each running message manager node, a cluster state data set comprising information about the nodes present in the cluster

Repeatedly evaluating, in each running one of said message manager nodes, a view state data set comprising information about the server nodes able to communicate with said message manager node,

Comparing said cluster state data set with said view state data set and evaluating if all message managers are able to communicate with said message manager node,

If not all message managers are able to communicate with said message manager node, determining an operational state for publish/subscribe style messaging out of at least two different states, where

a first one of said at least two different states is an non-retaining state, the message managers being in said non-retaining state being allowed to delete publish/subscribe messages as soon as it has determined that all eligible subscribes have received copies of those messages, and

a second one of said two different states is a retaining state, the message managers being in said retaining state not being allowed delete publish/subscribe messages prior to the expiry of the individual messages or the message manager changes to the non-retaining state and determines that all eligible subscribers have received copies of those messages,

and where the operational state is determined in a manner that of any two message manager nodes that are responsible for dispatching the same publish/subscribe messages not being able to communicate with each other, both must be in a retaining state.

As per claims 8 and 9:

For a message system for delivering data in the form of messages between message clients, the message system comprising a server cluster divided into sub-clusters containing a group of message manager nodes with means for storing and

distributing messages a method for ensuring operation during node failures and network partitioning, the method comprising:

Maintaining, in each running message manager node a sub-cluster state data set comprising information about the servers present in the cluster

Repeatedly evaluating, in each running one of said message manager nodes, a view state data set comprising information about the server nodes able to communicate with said message manager node,

Comparing said sub-cluster state data set with said view state data set and evaluating if all message managers of the sub-cluster are able to communicate with said message manager node,

If not all message managers of the sub-cluster are able to communicate with said message manager node, determining a point-to-point operation state out of at least two different states, where

a first one of said at least two different states is an unrestricted state, the message servers being in said unrestricted state being allowed to dispatch point-to-point messages sent prior to and since the last change of the view state of the current network, and

a second one of said two different states is a restricted state, the message servers being in said restricted state not being allowed to dispatch point-to-point messages sent prior to the last change of the view state of the current network.

and where the operational state is determined in a manner that of two message manager nodes of the same sub-cluster not being able to communicate with each other, at most one can be in an unrestricted state.

As per claim 10:

For a message system for delivering data in the form of messages between message clients, the message system comprising a server cluster containing a group of message manager nodes with means for storing and distributing messages a method for guaranteeing JMS semantics during node failures and network partitioning, the method comprising:

Maintaining, in each running message manager node, a cluster state data set comprising information about the nodes present in the cluster

Repeatedly evaluating, in each running one of said message manager nodes, a view state data set comprising information about the server nodes able to communicate with said message manager node,

Comparing said cluster state data set with said view state data set and evaluating if all message managers are able to communicate with said message manager node,

If not all message managers are able to communicate with said message manager node, determining an operational state for point-to-point style messaging out of at least two different states, where

a first one of said at least two different states is an unrestricted state for normal operation, the message managers being in said unrestricted state being allowed to dispatch point-to-point messages sent both prior to and since the last change of the view state of the current network, and

a second one of said two different states is a restricted state, the message managers being in said restricted state not being allowed to dispatch point-to-point messages sent prior to the last change of the view state of the current network,

and where the operational state is determined in a manner that of any two message manager nodes that are responsible for dispatching the same point-to-point messages not being able to communicate with each other, at most one can be in an unrestricted operational state.

and further comprising, if not all message managers are able to communicate with said message manager node, determining an operational state for publish/subscribe style messaging out of at least two different states, where

a first one of said at least two different states is an non-retaining state for normal operation, the message managers being in said non-retaining state being allowed to delete publish/subscribe messages as soon as it has determined that all eligible subscribes have received copies of those messages, and

a second one of said two different states is a retaining state, the message managers being in said retaining state not being allowed to delete

publish/subscribe messages prior to the expiry of the individual messages or until the message manager changes to the non-retaining state and determines that all eligible subscribers have received copies of those messages,

and where the operational state is determined in a manner that of any two message manager nodes that are responsible for dispatching the same publish/subscribe messages not being able to communicate with each other, both must be in a retaining state.

As per claim 11 and 12:

11. A message system for delivering data in the form of messages between message clients, comprising a server cluster containing a group of message manager nodes with means for storing and distributing messages a method for ensuring operation during node failures and network partitioning, wherein each message manager node comprises means for

Maintaining, in each running message manager node, a cluster state data set comprising information about the nodes present in the cluster

Repeatedly evaluating, in each running one of said message manager nodes, a view state data set comprising information about the server nodes able to communicate with said message manager node,

Comparing said cluster state data set with said view state data set and evaluating if all message managers are able to communicate with said message manager node,

If not all message managers are able to communicate with said message manager node, determining an operational state for point-to-point style messaging out of at least two different states, where

a first one of said at least two different states is an unrestricted state for normal operation, the message managers being in said unrestricted state being allowed to dispatch point-to-point messages sent both prior to and since the last change of the view state of the current network, and

a second one of said two different states is a restricted state, the message managers being in said restricted state not being allowed to dispatch point-to-point messages sent prior to the last change of the view state of the current network, and

wherein said means for determining an operational state out of at least two states are configured in a manner that of two message manager nodes that are responsible for dispatching the same point-to-point messages not being able to communicate with each other, at most one can be in an unrestricted operational state.

As per claims 13 and 14:

A computer program product comprising a computer usable medium having computer readable program code means embodied therein for enabling a computer to serve as a message manager in a server cluster, the program product comprising computer readable code means for enabling the computer

To maintain, in each running message manager node, a cluster state data set comprising information about the nodes present in the cluster

To Repeatedly evaluate, in each running one of said message manager nodes, a view state data set comprising information about the server nodes able to communicate with said message manager node,

To compare said cluster state data set with said view state data set and to evaluate if all message managers are able to communicate with said message manager node,

If not all message managers are able to communicate with said message manager node, to determine an operational state for point-to-point style messaging out of at least two different states, where

a first one of said at least two different states is an unrestricted state for normal operation, the message managers being in said unrestricted state being allowed to

dispatch point-to-point messages sent both prior to and since the last change of the view state of the current network, and

a second one of said two different states is a restricted state, the message managers being in said restricted state not being allowed to dispatch point-to-point messages sent prior to the last change of the view state of the current network,

and where the means for determining an operational state are programmed in a manner that of any two message manager nodes that are responsible for dispatching the same point-to-point messages not being able to communicate with each other, at most one can be in an unrestricted operational state.

Ex Parte Quayle

This application is in condition for allowance except for the following formal matters discussed above .

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryce P Bonzo whose telephone number is (571)272-3655. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bryce P. Bonzo

Bryce P Bonzo
Examiner
Art Unit 2114